

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/057582 A1

(51) International Patent Classification⁷: **G11C 11/34**,
G11B 9/14

(21) International Application Number:
PCT/AU2004/001735

(22) International Filing Date: 9 December 2004 (09.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003906808 9 December 2003 (09.12.2003) AU

(71) Applicant (for all designated States except US): **WRIOTA
PTY LTD** [AU/AU]; c/- Allen and Buckridge, 18 Bulletin
Place, Sydney, NSW 2000 (AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WILLIAMS,
James, Stanislav** [AU/AU]; 15 Twynam Street, Holder,
Australian Capital Territory 2611 (AU). **BRADBY, Jodie**,

Elisabeth [AU/AU]; Unit 8, 41 Halford Crescent, Page,
Australian Capital Territory 2614 (AU). **SWAIN, Michael,
Vincent** [AU/AU]; 24 Robin Avenue, Turrumurra, New
South Wales 2074 (AU).

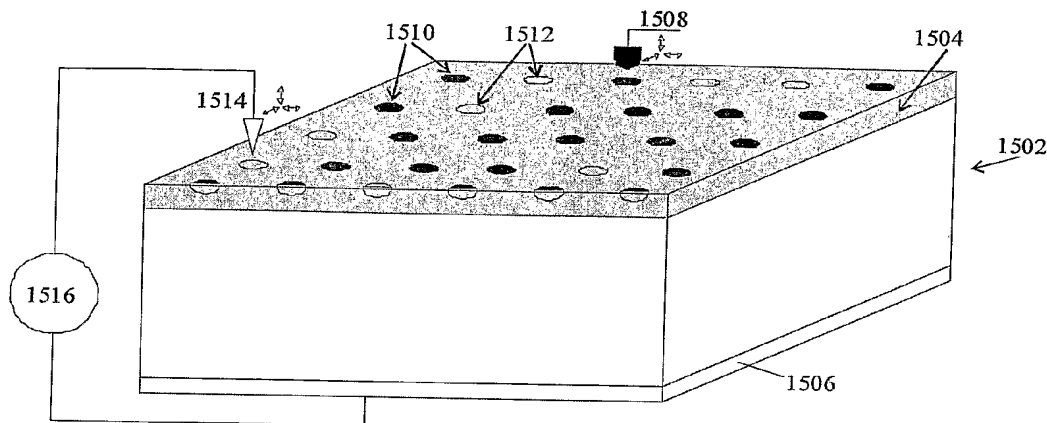
(74) Agents: **WEBBER, David, Brian** et al.; Davies Collison
Cave, 1 Nicholson Street, Melbourne, Victoria 3000 (AU).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: A MEMORY DEVICE, AN INFORMATION STORAGE PROCESS, A PROCESS, AND A STRUCTURED MATERIAL



(57) Abstract: A memory device, including a plurality of nanoscale memory cells (1510, 1512) created by applying pressure to and removing pressure from one or more regions (1510, 1512) of a substance (1502) to change the electrical conductivity of those regions (1510, 1512). An electrically conductive read probe (1514) determines the conductivities of the regions and thereby the information stored in the cells. A write probe (1508) applies pressure to and removes pressure from selected cells to change the electrical conductivity of those cells and thereby store or erase information.

WO 2005/057582 A1



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

— *with amended claims*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.